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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/777,682 | 02/07/2001 | Yuji Isoda | Q61219 | 3337 |

7590 06/25/2003

SUGHRUE, MION, ZINN
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

LEE, SHUN K

ART UNIT PAPER NUMBER

2878

DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,682

Applicant(s)

ISODA, YUJI

Examiner

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2003 & 27 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-28 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 17-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-16 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/7/01 & 3/27/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species I of group I (claims 1, 2, 4, 6-10, 12-16, and 25-28) in Paper No. 6 is acknowledged.

Claims 5 and 17-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Information Disclosure Statement

2. The listing of references in the specification (pg. 3, 16, and 26) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 27 March 2003 have been approved.
4. The corrected or substitute drawings were received on 27 March 2003. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 21 (Fig. 9). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to

Art Unit: 2878

avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron *et al.* (US 5,556,716) in view of Kesting (US 4,450,126).

In regard to claims 1, 2, and 4, Herron *et al.* disclose a radio-conductive material in the form of a nano-composite (column 4, line 62 to column 5, line 2) comprising nylon (column 5, lines 34-46) and inorganic material (e.g., bismuth iodide; column 4, lines 55-61) having radiation absorbing power (column 3, lines 29-33) and that the radio-conductive material can be fabricated by conventional methods such as spraying, spin-coating, draw-coating, melt-pressing and the like (column 6, lines 6-11; column 7, lines 17-26). The radio-conductive material of Herron *et al.* lacks an explicit description that the nylon is an alcohol-soluble nylon (e.g., composite material of nylon 6 and nylon 66). However, nylons are well known in the art. For example, Kesting teaches (column 1, lines 11-38) that an alcohol-soluble nylon such as a composite material of nylon 6 and nylon 66 has high burst strengths and flexibilities. Therefore it would have been obvious to one having ordinary skill in the art to provide an alcohol-soluble nylon (e.g.,

Art Unit: 2878

nylon 6 and nylon 66) in the solid sensor of Herron *et al.*, in order to obtain a radio-conductive film (60) having high burst strengths.

In regard to claim **6** which is dependent on claim 1, Herron *et al.* also disclose (column 1, line 53 to column 2, line 4) a solid sensor having a radio-conductive layer formed of a radio-conductive material defined in claim 1.

7. Claims 25, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron *et al.* (US 5,556,716).

In regard to claims **25** and **26**, Herron *et al.* disclose (column 1, line 53 to column 2, line 4; Fig. 1) a solid sensor comprising a radio-conductive layer (60) formed of inorganic/organic composite material (e.g., bismuth iodide/nylon composite material; column 4, lines 55-61; column 5, lines 34-46) and an electrode (70) provided on the radio-conductive layer (60) and that the electrode (70) comprises a metal (column 6, lines 33-38). The solid sensor of Herron *et al.* lacks an explicit description that the metal is indium. However, metals such as indium (see for example, Merriam-Webster's Collegiate[®] Dictionary, Tenth Edition) are well known in the art. Therefore it would have been obvious to one having ordinary skill in the art to provide indium as the metal for the electrode (70) in the solid sensor of Herron *et al.*, in order to form a metallic conductive electrode.

In regard to claim **28** which is dependent on claim 25, Herron *et al.* also disclose (column 1, line 53 to column 2, line 4) a radiation image read-out apparatus comprising the solid sensor defined in claim 25 and a read-out means for reading out a radiation image recorded on the solid sensor as a latent radiation image.

Art Unit: 2878

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herron *et al.* (US 5,556,716) in view of Kesting (US 4,450,126).

In regard to claim **27** which is dependent on claim 25, Kesting is applied as in claim 1 above.

Allowable Subject Matter

9. Claims 7-16 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be directed to a nonobvious improvement over the invention patented in US Patent 5,556,716. The improvement comprises in combination with other recited elements, $x\text{-MX}$ wherein M represents at least one alkali metal selected from the group consisting of Li, Na, K, Rb and Cs, X represents at least one halogen selected from the group consisting of F, Cl, Br and I, and the ratio x by weight of MX to BiI_3 is $0 < x \leq 1$ or $0 < x \leq 0.2$.

Response to Arguments

10. Applicant's arguments filed 26 February 2003 have been fully considered but they are not persuasive.

Applicant admits (last paragraph on pg. 4 of remarks filed 26 February 2003) that one of ordinary skill appreciates that nylon has many variants. Applicant then argues (first five paragraphs on pg. 5 of remarks filed 26 February 2003) that an alcohol-soluble nylon is not suggested since Herron *et al.* teach a method for producing BiI_3 -Nylon using a solid phase method. Examiner respectfully disagrees. Herron *et al.* state (column 6, lines 6-11) that "Good quality thin films (e.g., 1 to 1000 μm) of the photoconductive

Art Unit: 2878

compositions of the invention can conveniently be prepared by spin-coating of a solution of the clusters and the polymer, thermally pressing the clusters and polymer together or, alternatively, the clusters can be directly synthesized inside the polymer film". Thus Herron *et al.* teach fabrication by spin-coating a solution of the clusters and the polymer. Therefore it would have been obvious to one having ordinary skill in the art to provide an alcohol-soluble nylon (e.g., nylon 6 and nylon 66) in the solid sensor of Herron *et al.*, in order to obtain a radio-conductive film (60) having high burst strengths.

Applicant admits (fourth paragraph on pg. 6 of remarks filed 26 February 2003) that indium electrodes are known in the art. Applicant then argues (last two paragraphs on pg. 5 to last paragraph on pg. 6 of remarks filed 26 February 2003) that an indium electrode is non-obvious since gold has a higher conductivity than indium. Examiner respectfully disagrees. Herron *et al.* state (column 6, lines 33-46) that "Where the photoconductive element is in the form of a self-supporting film or a coating, one side of the photoconductive element preferably contacts an electrically conductive surface during charging of that element. Where the photoconductive element is a self-supporting film, the film may be metallized on one side by, for example, aluminum, silver, copper, nickel, and the like to provide an electrically conductive layer for contacting an electrically conductive surface during charging. Alternatively, an electrically conductive surface may be provided by laminating the metallized films to provide a metal foil. As a further alternative, the photoconductive element can be brought into direct electrical contact with a conducting surface to effect charging. Good contact between the film and the conducting surface can be insured by wetting the conducting layer with water or a suitable organic liquid, such as ethanol, acetone or a conductive fluid". Thus it is clear that Herron *et al.* disclose that metal electrodes should be used but does not explicitly list all known metal electrodes. One having ordinary skill would select one of the plurality of known metal electrodes. However, the fact that there

Art Unit: 2878

exist a plurality of known metal electrodes does not make known indium electrodes a nonobvious choice for the electrode. Further, applicant has failed to provide any evidence within the cited references that Herron *et al.* teaches that only Au electrodes are to be used since Au electrodes have a higher conductivity than indium electrodes and thus teaches away from the use of indium electrodes. Therefore it would have been obvious to one having ordinary skill in the art to provide indium as the metal for the electrode (70) in the solid sensor of Herron *et al.*, in order to form a metallic conductive electrode.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Tuesday-Thursday.

Art Unit: 2878

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SL
June 16, 2003


DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800